

Table 14. Mean number of research users per system, by detailed type of instrument and adequacy of instrumentation: 1993

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Detailed type of instrument	Mean number of research users per system			
	All instruments	State-of-the-art instruments ¹	Instruments not state-of-the-art, but adequate to meet the needs of researchers	Instruments not state-of-the-art; inadequate to meet the needs of researchers
Total, all instruments	24.2	25.7	24.2	20.5
Computers and data handling instruments	58.5	88.5	63.6	26.5
Computers/components costing:				
\$1,000,000 and over	2090.8	S	S	0
\$500,000 - \$999,999	169.1	53.5	131.0	S
\$50,000 - \$499,999	54.0	100.6	59.9	29.3
\$20,000 - \$49,999	45.0	84.1	43.2	16.1
Chromatographs and spectrometers	15.2	14.0	14.9	21.0
Chromatographs and elemental analyzers	13.7	13.8	13.0	21.6
Electron/auger/ion scattering	9.6	10.0	8.5	S
UV/visible/infrared spectrophotometer	10.9	7.2	13.0	6.4
NMR/EPR spectrometer	29.2	27.1	27.0	37.4
Xray diffraction systems	19.2	20.6	18.4	S
Other spectroscopy instruments	14.9	15.4	13.9	20.5
Microscopy instruments	18.3	18.2	18.5	16.9
Electron microscopes	29.9	25.2	32.9	23.8
Other microscopy instruments	13.0	15.5	11.9	S
Bioanalytical instruments	19.5	20.4	19.2	18.7
Cell sorters/counters, cytometers	21.3	24.6	19.3	S
Centrifuges and accessories	18.5	16.1	19.5	S
DNA/protein synthesizers/sequencers/analyzers	32.2	26.0	37.8	S
Growth/environmental chambers	8.9	9.0	8.9	S
Scintillation/gamma radiation/counters/detectors	18.0	29.8	15.4	S
Other instruments	14.3	21.2	10.9	8.5
Electronics instruments (cameras,etc)	9.7	12.6	8.9	6.2
Temperature/pressure control/measurement instruments	11.7	14.8	9.8	S
Lasers and optical instruments	7.1	6.7	7.3	5.4
Robots, manufacturing machines	11.5	9.5	14.8	S
Telescopes/astronomical	10.2	11.6	13.3	S
Nuclear reactors/nuclear science instrument systems	79.1	S	S	S
Research vessels/planes/helicopters	51.7	S	S	0
Wind/wave/water/shock tunnels	S	S	S	S
Molecular/electron/ion beam systems	13.7	9.4	12.1	23.5
Major prototype systems	14.8	19.9	8.0	S
Other, not elsewhere classified	19.7	34.9	13.1	8.8

¹ The questionnaire was worded: "State-of-the-art: the most highly developed and scientifically sophisticated equipment of its kind."

NOTE: Data in this table were not collected for supersystems, which are large, integrated instrumentation systems/facilities generally with an aggregate purchase price of \$1 million or more.

KEY: S = fewer than 10 cases for analysis

SOURCE: National Science Foundation/SRS, Survey of Academic Research Instruments and Instrumentation Needs: 1993